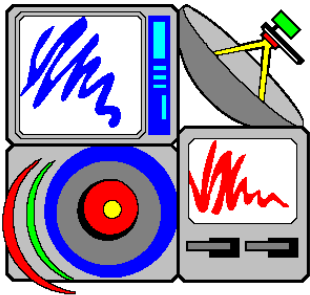


Making Connections

Implementing

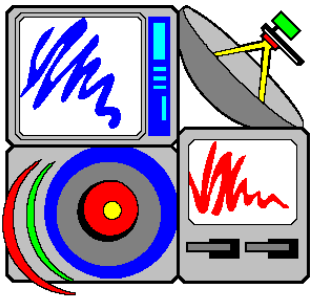
DHCP



Making Connections

Course Goals

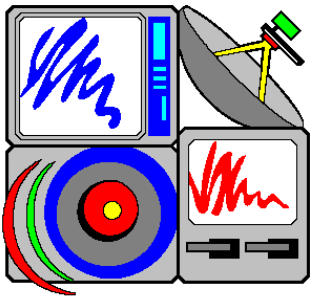
- To describe the Functionality & Management Values of DHCP.
- To Install DHCP Server on an NT4 Server
- To configure DHCP.
- To Describe the DHCP Leasing Process



Making Connections

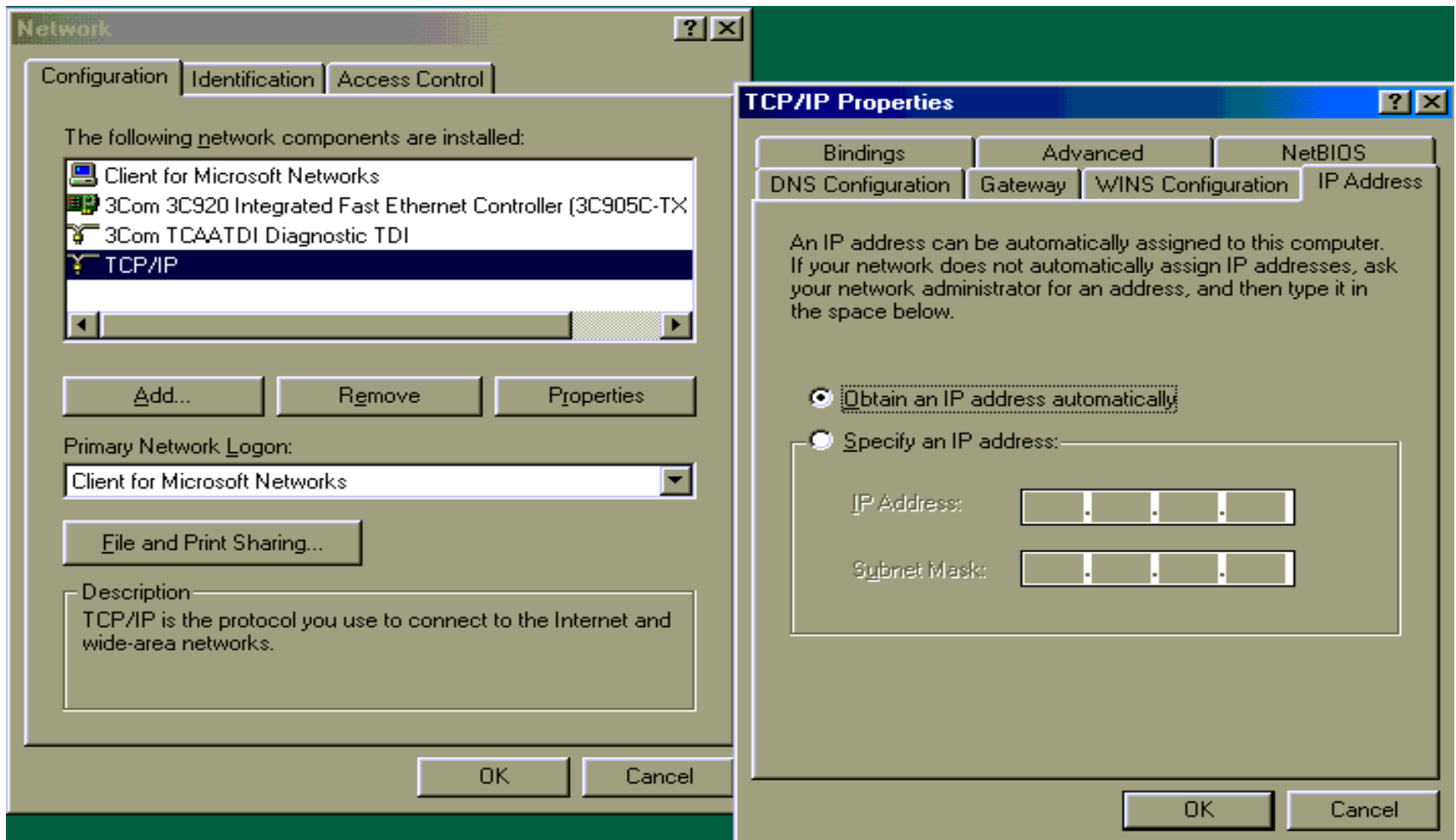
Functionality

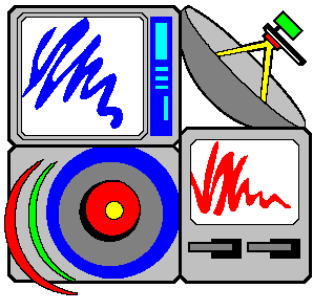
- When DHCP is installed on a Network, the Need to Configure TCP/IP Properties under Network Properties on the Individual Workstation is no longer necessary.
- The Technician will only need to ensure the TCP/IP Properties have one setting enabled.



Functionality

Making Connections

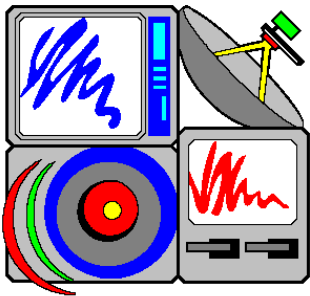




Making Connections

Functionality

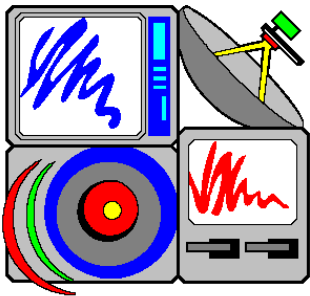
- This Machine will get the TCP/IP Configuration Properties from the DHCP Server on that Network each time it boots.
- If this Workstation moves to a different Network, with its own DHCP Server, the workstation will get the correct settings for the new network, without reconfiguration.



Making Connections

Limitations

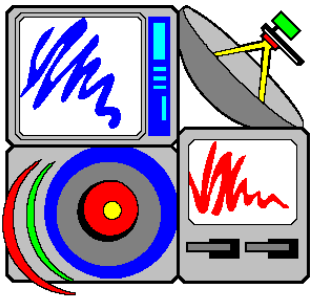
- Although TCP/IP Properties are automated, the other settings under Network Neighborhood Properties still DO need to be configured. On Win95/98 these include:
 - Primary Login
 - Under Identification Tab, Machine Name & Workgroup
 - Under Client for Microsoft Networks, Login Domain



Making Connections

Installation

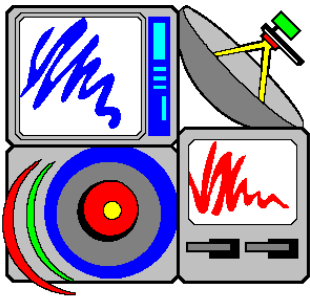
- Before Installing:
 - Have Your NT4 Server CD with you.
 - Have the current NT Service Pack (5 or 6a) with you.
- To install:
 - Start->Settings->Control Panel->Network.
 - Services->Add.
 - Select Microsoft DHCP Server.



Making Connections

Installation

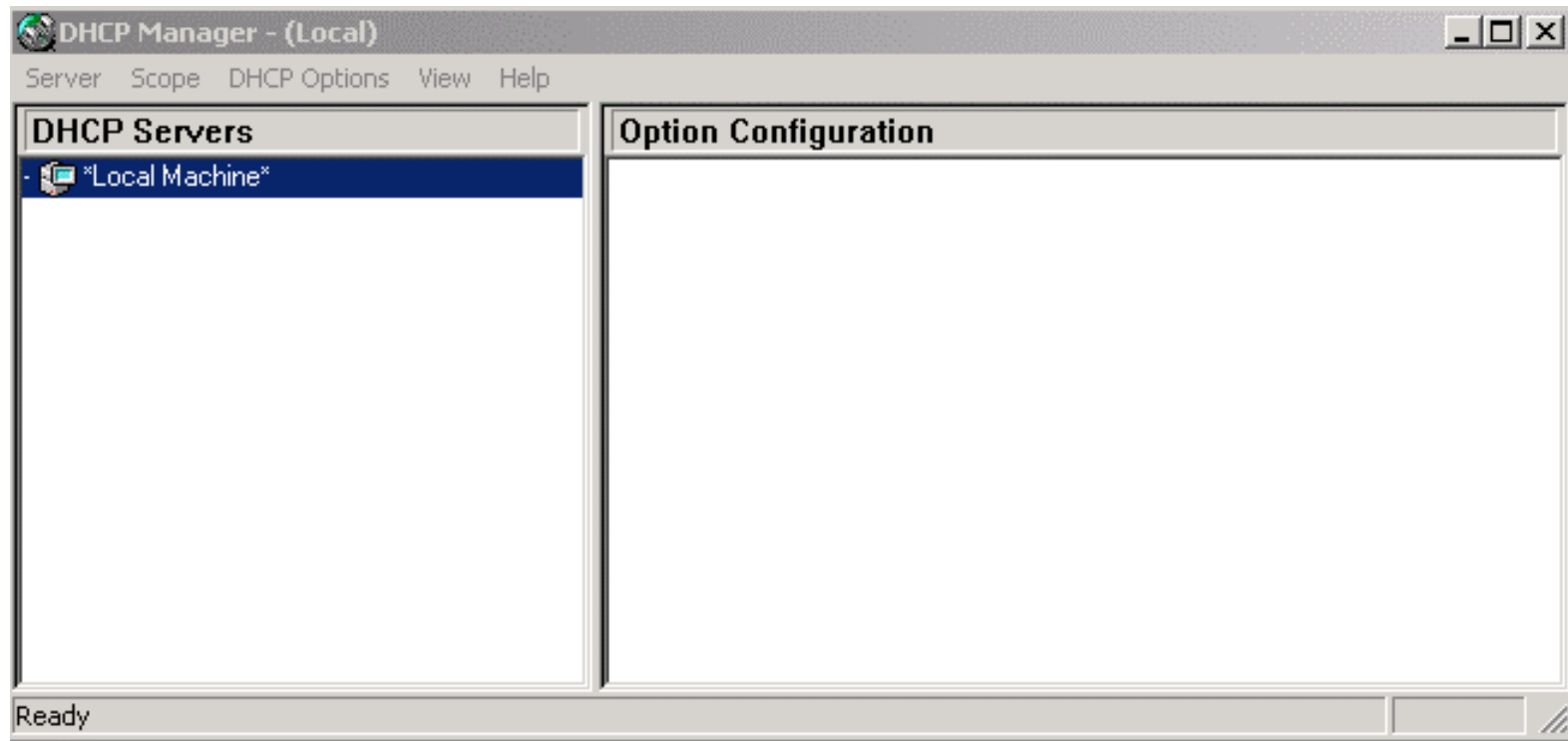
- When you Select OK, the Server will prompt you for the NT4 Server CD, Follow Prompts.
- This will install both the DHCP Service and the DHCP Admin Tool on this Server.
- Once this is complete, reapply the current Service Pac. Reboot as required.
- After the machine comes back up, log in. Run Start->Programs->Admin. Tools->DHCP Admin.

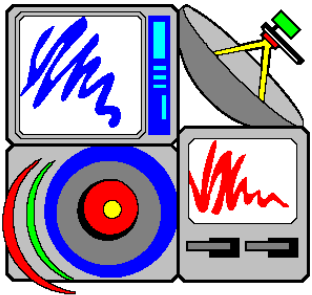


Making Connections

Installation

- A dialog Box should open looking like:

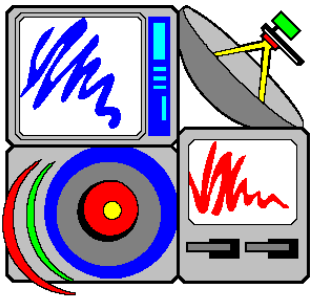




Making Connections

Installation

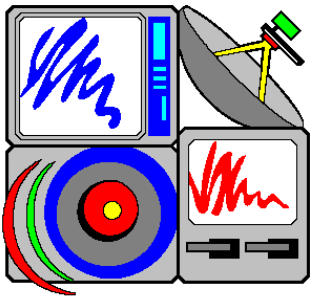
- As a last test, on the Menu Bar, click on Scope. The pull-down menu should have the “Superscope” option listed there.



Making Connections

Configuration

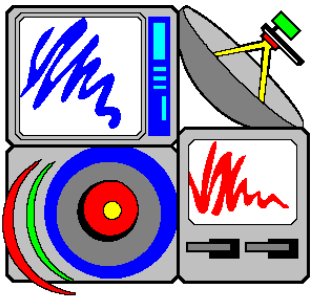
- Before setting down to configure DHCP, you should have the following information:
 - IP Address Range
 - Subnet Mask
 - Default Gateway/Router
 - Domain Name
 - DNS Server
 - WINS Server



Making Connections

Configuration

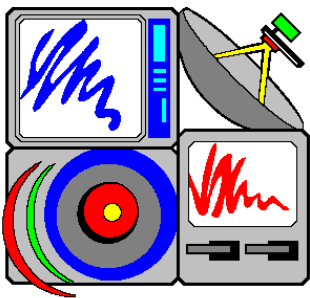
- KDE recommends running the DHCP Service on a Local Network Server whenever possible.
- There are three steps in setting up the DHCP Service:
 - Creating Scopes
 - Setting Global & Scope DHCP Options
 - Setting up Superscope (if necessary)



Creating Scopes

Making Connections

- Typically there will be either one or two scopes to be created:
 - One for the public range
 - And possibly, one for the private range.
- To create a scope:
 - Highlight “Local Server” in the Left Window
 - Click on Scope->Create
- The following slides show how to complete the dialog box that will appear.



Making Connections

Creating Scopes

- Note that the entire range is put in the pool and then parts are excluded.

Create Scope - (Local)

IP Address Pool

Start Address: 170 . 180 . 180 . 1

End Address: 170 . 180 . 180 . 254

Subnet Mask: 255 . 255 . 255 . 0

Exclusion Range:

Start Address: . . .

End Address: . . .

Excluded Addresses:

170.180.180.1 to 170.180.180.20

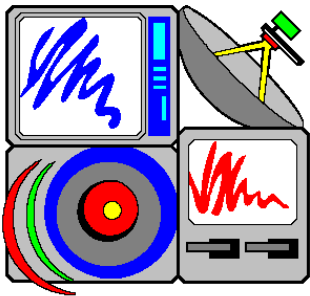
Lease Duration

☐ Unlimited

☒ Limited To: 90 Day(s) 00 Hour(s) 00 Minutes

Name: Public HS Range

Comment:



Making Connections

Creating Scopes

Create Scope - (Local)

IP Address Pool

Start Address: 10 . 100 . 1 . 1

End Address: 10 . 100 . 254 . 254

Subnet Mask: 255 . 255 . 0 . 0

Exclusion Range:

Start Address: . . .

End Address: . . .

Excluded Addresses:

10.100.1.1 to 10.100.2.1

Lease Duration

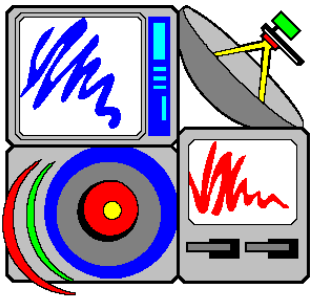
☐ Unlimited

☒ Limited To: 90 Day(s) 00 Hour(s) 00 Minutes

Name: Private HS Range

Comment:

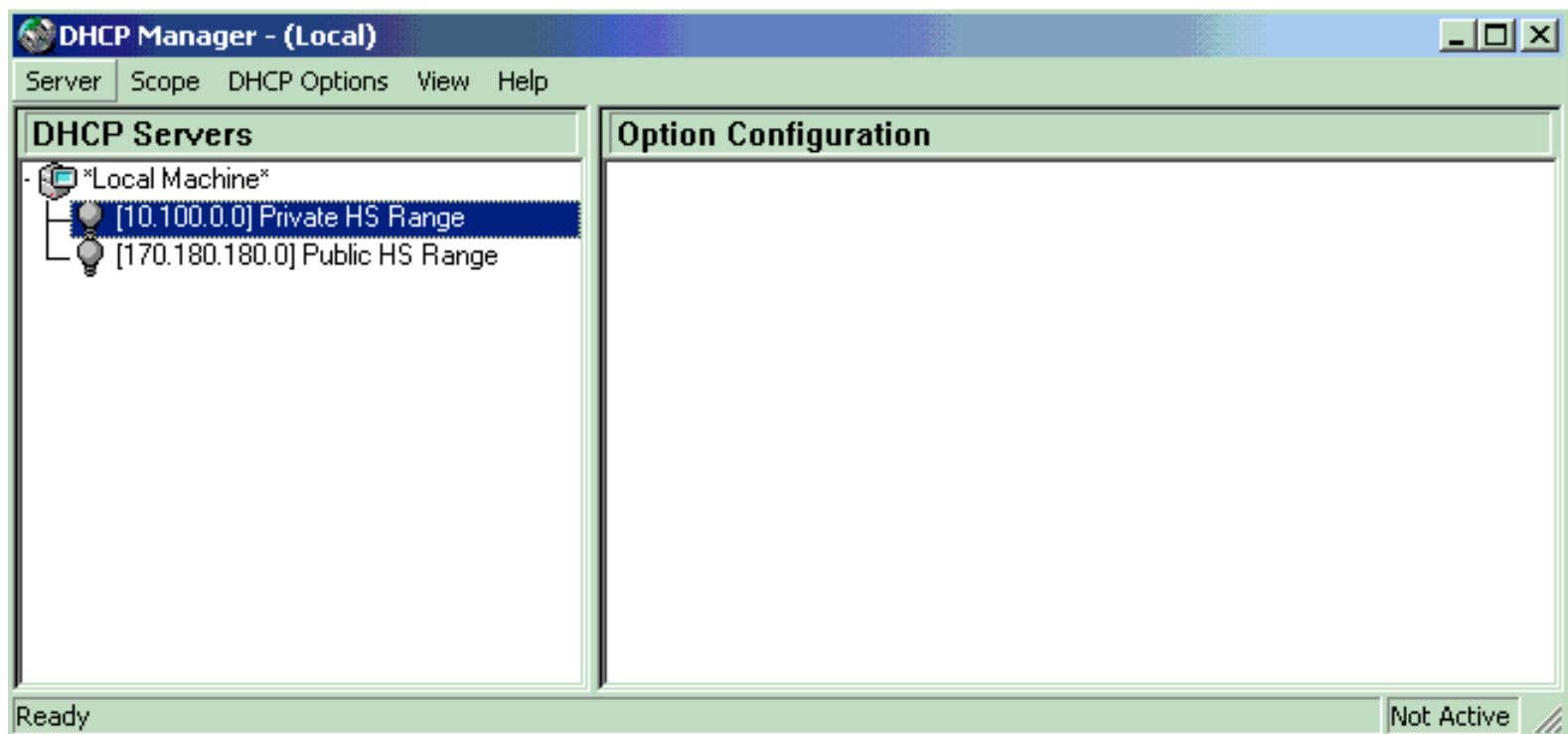
- When prompted to activate new scope now, Select 'YES'.

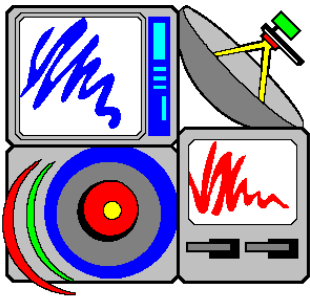


Making Connections

Creating Scopes

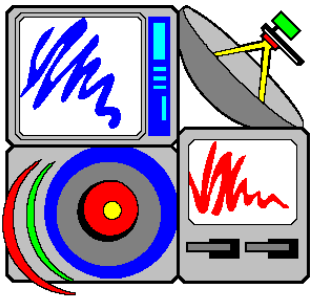
- When you are done, DHCP Manager should now look like:





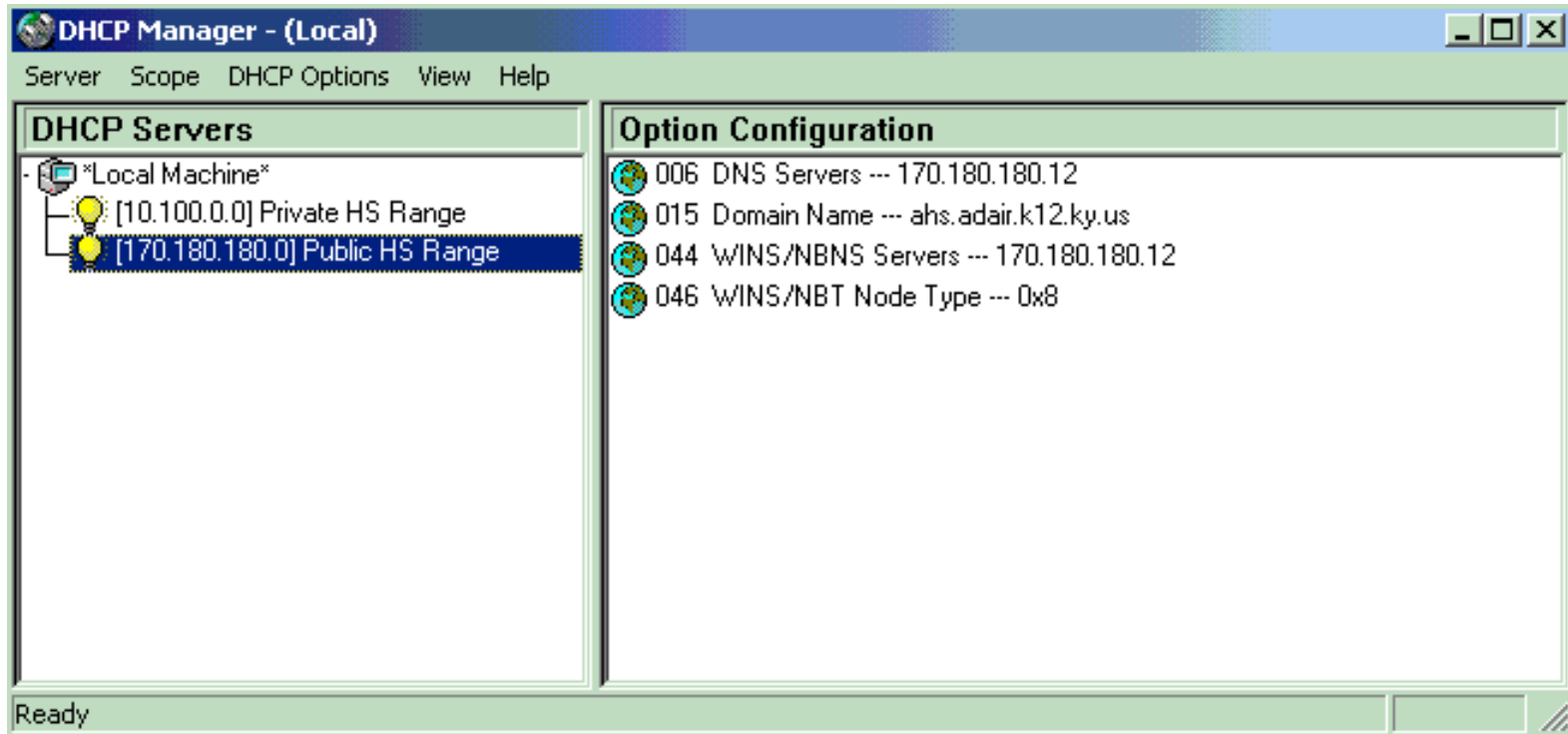
Global Options

- Global options are settings that do not depend on which subnet we are connected to:
- The four Global options to be set are:
 - 006 DNS Servers
 - 015 Domain Name
 - 044 WINS/NBNS Servers
 - 046 WINS/NBT Node Type
- These can set under DHCP Options->Global
- When completed the display should look like:

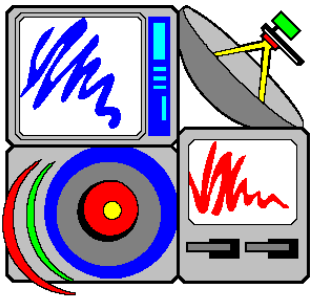


Making Connections

Global Options

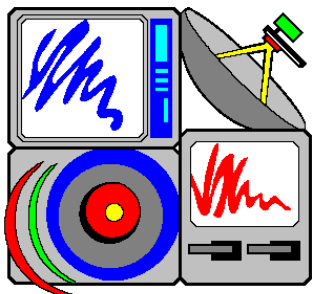


- Note that one of the Scopes is Highlighted.



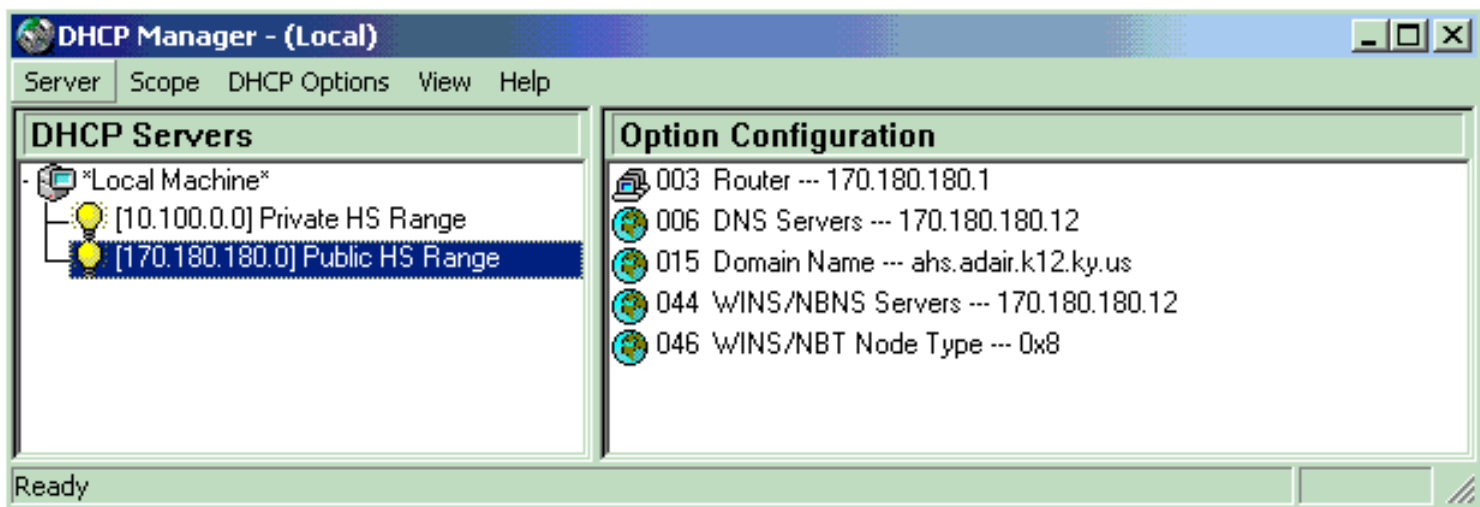
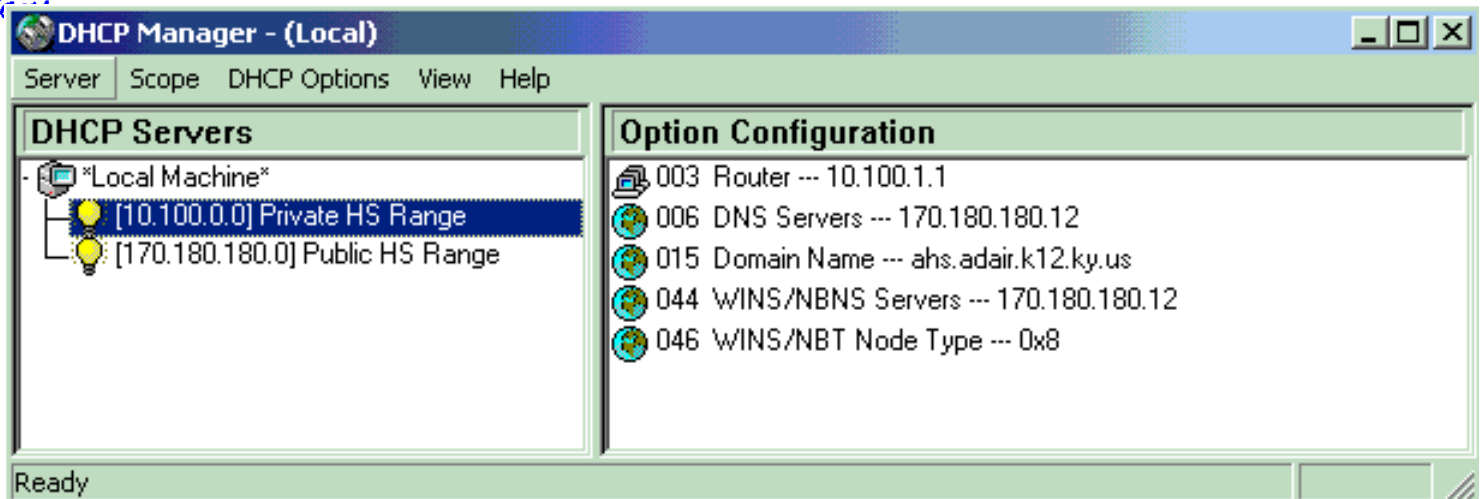
Scope Options

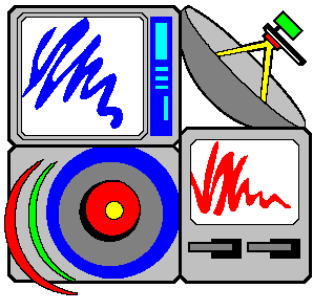
- Scope Options are settings that will vary from range to range (or scope to scope).
- The one Scope Option to be set is:
 - 003 Router
- This will have to be set for each Scope.
- This can set under DHCP Options->Scope
 - Make sure you highlight the appropriate Scope.
 - When Completed the display should look like:



Making Connections

Scope Options

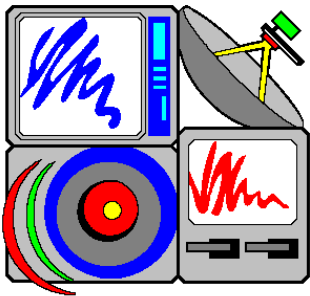




Making Connections

Superscopes

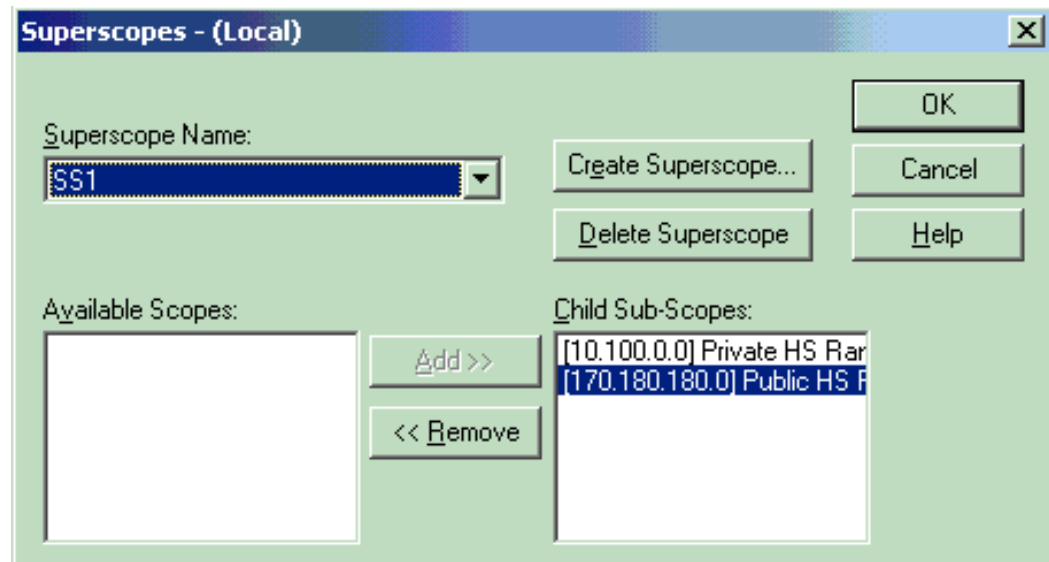
- The Superscope mechanism is how the Administrator lets the DHCP Service know that two (or more) Logical Networks exist on the same Physical Network.
- This means an address that comes out of either scope will work on that Network.
- To set up a Superscope:

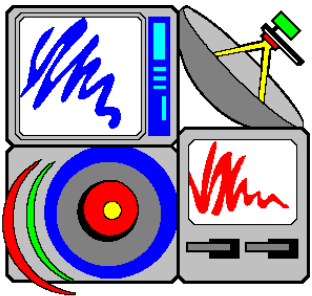


Making Connections

Superscopes

- Highlight ‘Local Machine’, Select Scopes-> Superscopes
- Create Superscope... (Name it SS____)
- Once the Superscope is created, Add the Child Scopes to it.

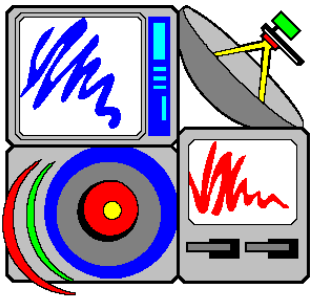




Making Connections

DHCP Handshaking

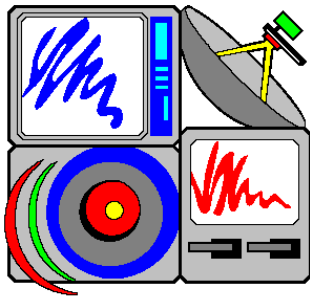
- The DHCP Lease is typically a four-step process:
 - DHCP Discover
 - DHCP Offer(s)
 - DHCP Request
 - DHCP Acknowledgement



Making Connections

Testing

- Set up TCP/IP Properties to obtain IP address automatically. Reboot as required.
- On Windows 95/98, Start->Run->winipcfg
- Dialog Box opens. Click “More Info.”
- Using the buttons and fields available, Everything will be able to be verified as working.



Making Connections

Testing

IP Configuration

Host Information

Host Name	DELLV2WS1.KDE.STATE.KY.US
DNS Servers	162.114.24.90
Node Type	Hybrid
NetBIOS Scope Id	
IP Routing Enabled	<input type="checkbox"/>
WINS Proxy Enabled	<input type="checkbox"/>
NetBIOS Resolution Uses DNS	<input type="checkbox"/>

Ethernet Adapter Information

Ethernet Adapter	3Com EtherLink PCI
Adapter Address	00-B0-D0-D8-87-1F
IP Address	162.114.136.134
Subnet Mask	255.255.255.0
Default Gateway	162.114.136.1
DHCP Server	162.114.158.26
Primary WINS Server	162.114.136.75
Secondary WINS Server	
Lease Obtained	03 07 01 12:31:03 AM
Lease Expires	03 10 01 12:31:03 AM

OK Release Renew Release All Renew All